Clean Technology Hub
Energy Innovation Centre

Clean Technology Hub Business Case Study Series: ECOWAKA

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ECOWAKA

This case study was written by David Inalegwu David, Kolade Kolawole and Daramfon Bassey. It was compiled primarily using information from an interview with the company's Founder and CEO.

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EcoWaka

Introduction: Building for the African Use Case

Nigeria's move to electric mobility is nearing a pivotal phase. While passenger vehicles and buses receive a lot of regulatory attention, three-wheelers represent one of the most viable entry points for widespread EV adoption in African cities. These vehicles, known as "keke" in Nigeria, are the backbone of last-mile passenger transportation in places such as Lagos, Kano, and Abuja. They navigate narrow streets, provide affordable daily transportation for millions of commuters, and create employment opportunities for thousands of riders.

Imported internal combustion engine (ICE) models, primarily from Asian manufacturers, have long dominated the traditional three-wheeler market in Nigeria. Initially affordable, these vehicles incur high operational costs for riders due to fuel consumption, regular maintenance, and the physical toll of manual clutch operation. The removal of Nigeria's fuel subsidy in June 2023 worsened these economic pressures, creating a pressing need for alternatives that may cut operational costs while preserving service reliability.

Ecowaka, a Lagos-based Nigerian electric mobility company founded in June 2024, has entered this sector with a unique strategy. Rather than simply importing and distributing electric three-wheelers, Ecowaka is developing design and assembly capabilities from the ground up. The company's strategy focuses on developing products with a clear and ambitious goal: to promote urban mobility utilizing electric tricycles designed for Nigeria's realities, tough roads, and unique power and infrastructure constraints.

The Founder's Journey: From Solar to Sustainable Mobility

Ecowaka's origins lie in Nigeria's commercial and industrial (C&I) solar market. The company's founder and CEO, Mr. Prince Ojeabulu, was the COO and then CEO of Rensource Energy, one of the leading providers of solar energy solutions in Nigeria. As a result of this experience, he gained comprehensive, in-depth knowledge of Nigeria's energy cost profile and how rising electricity prices impact business productivity.

Operating a large-scale solar company yielded a significant observation that ultimately shaped the creation of Ecowaka:

> *"I saw an opportunity for the largest impact from providing an alternative energy source, not in homes, but in mobility. Mobility offered the strongest commercial use case for clean energy in Nigeria." – Prince Ojeabulu, Founder & CEO, Ecowaka*

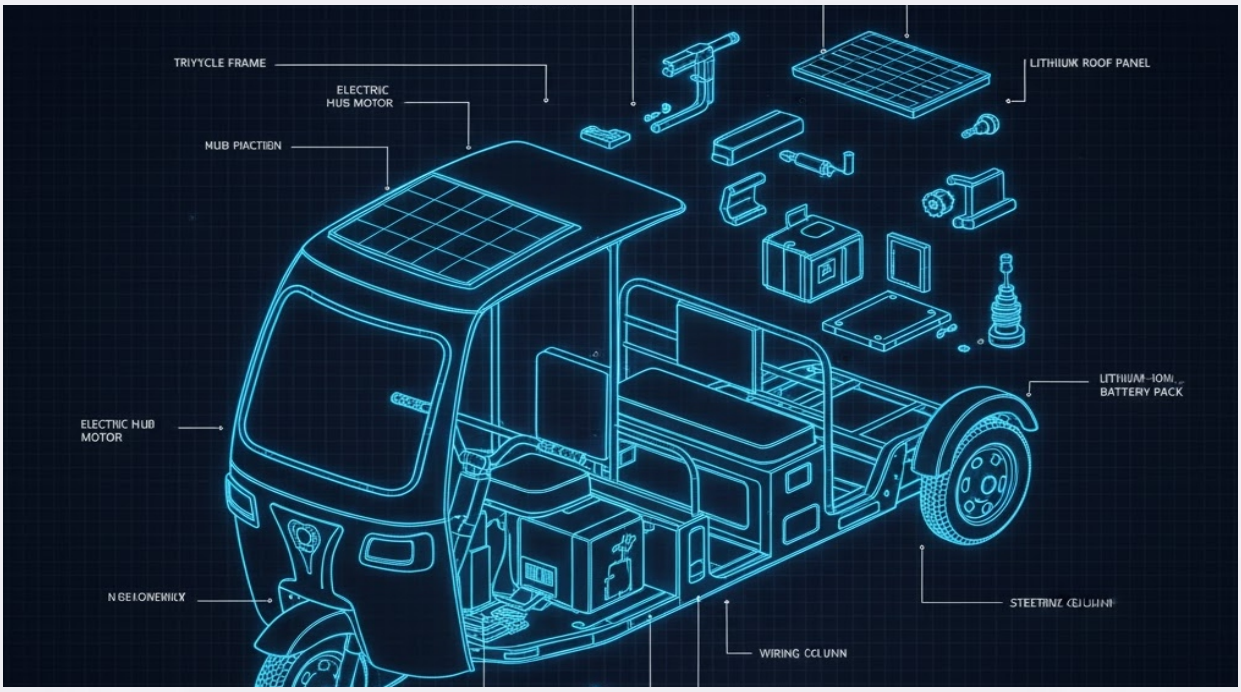
In June 2024, Mr. Prince founded Ecowaka with a group of friends who joined him as co-founders and still work alongside him at the company. In early 2025, the business started operations after being incorporated in Nigeria. Though still in its early stage, the company's foundation rests on decades of combined expertise in infrastructure, energy, and the real-world challenges of starting a business in challenging African markets.

Strategic Positioning: Design, Assembly, and Local Manufacturing

In any nascent ecosystem, early players must assume multiple roles across the value chain. In Nigeria, this trend has recurred in industries including solar energy and telecoms. In the beginning, businesses handle everything themselves until the market is developed enough to allow for specialization. Ecowaka recognizes that it is operating in these early days and must therefore establish capabilities across design, production, and service delivery. However, the company has deliberately concentrated its main competitive advantage in three areas: assembly, manufacturing, and software integration.

The decision to focus on three-wheelers reflects careful market analysis; three-wheelers serve a distinct transportation need in Nigerian cities. Unlike two-wheelers, which primarily handle logistics and last-mile delivery, three-wheelers provide passenger transport. This means Ecowaka considered two target customers: the rider who operates the vehicle as a business and the passenger who uses the service. For adoption to be successful, the value proposition must make sense for both parties. Riders need a product that reduces operating costs while maintaining earning potential. Passengers need safe, comfortable, and affordable transport. This dual customer requirement shaped the design philosophy from the outset.

Like most automobile manufacturers globally, Ecowaka concentrates its internal resources on areas of competitive advantage while sourcing proprietary components from specialist vendors and OEMs. Tricycles made by Ecowaka blend imported electrical systems that were co-designed with original equipment manufacturers (OEMs) with locally manufactured mechanical parts like suspension and chassis systems. Ecowaka has combined these foreign components with its proprietary software. The company's early engineering phase involved six months of iterative prototyping and collaboration with OEMs to fine-tune the electric and mechanical architecture. "Anyone can buy components online," Mr. Prince explained. "But building them to suit African conditions takes time, design discipline, and rigorous testing."



Product Architecture: Solving for Power and Range

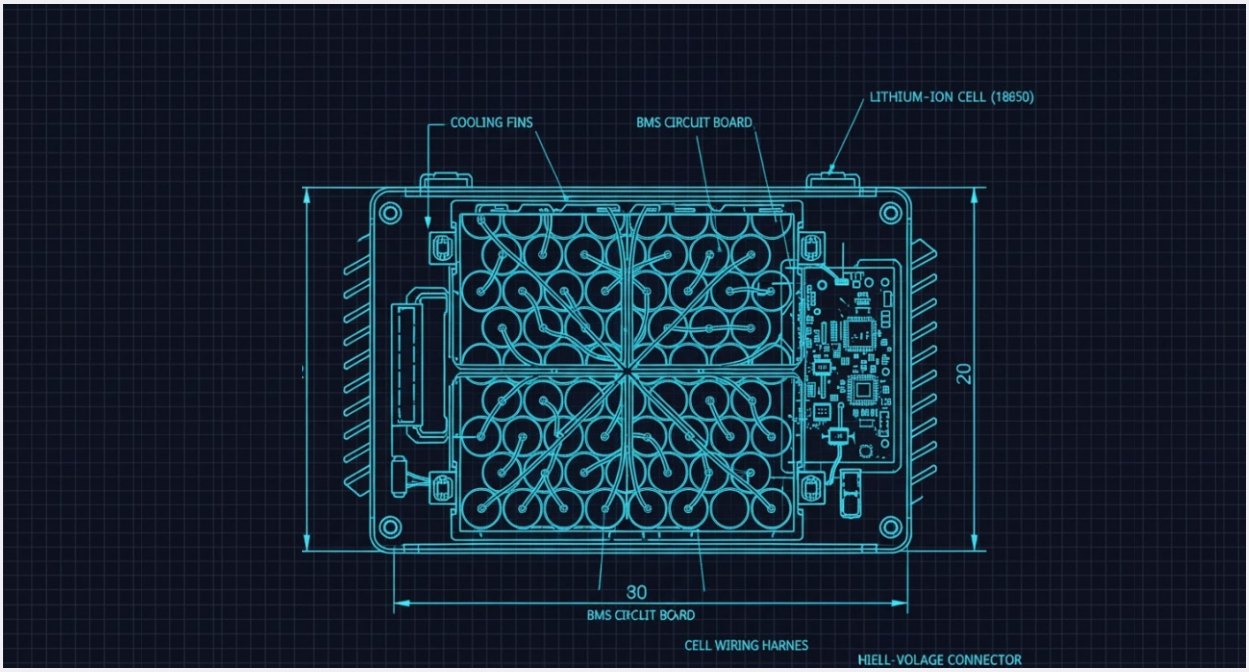
One of the most sophisticated aspects of Ecowaka's approach is its battery architecture strategy. The company offers two distinct battery configurations, each designed for different operating environments and customer preferences. This dual approach emerged from Ecowaka's recognition that Nigeria presents unique power and infrastructure challenges that require tailored solutions.

The first configuration features a larger battery pack capable of operating through an entire commercial day without battery swapping. The batteries will be charged overnight, minimizing dependence on daytime energy infrastructure. This approach is particularly well-suited to Nigeria, where power availability remains unpredictable and building extensive battery swapping networks presents significant capital and operational challenges. By designing batteries that can complete a full day's work on a single charge, Ecowaka reduces its customer's dependence on uncertain power supply during business hours.

The second configuration uses smaller batteries that require battery swapping during the day. This approach appeals to price-sensitive customers but depends on reliable access to battery swapping infrastructure. Ecowaka is careful to ensure that customers understand the implications of each choice before purchase. The company does not simply offer two products at different price points but educates buyers on the operational requirements, risks, and rewards associated with each battery architecture.

By offering choice rather than a single solution, Ecowaka empowers customers to select products that align with their operational needs, risk tolerance, and financial constraints. Some customers prefer the lower upfront cost and accept the operational complexity of battery swapping. Others prioritize operational simplicity and are willing to pay more for larger batteries. Both customer segments represent valid business cases, and Ecowaka's product strategy accommodates both.

> *"Swapping makes sense where you have stable power, but Nigeria's unique power challenge means we must build assets that can operate a full commercial day without depending on daytime power." — Prince Ojeabulu*


COOLING FINS
BMS CIRCUIT BOARD
LITHIUM-ION CELL (18650)
20
30
BMS CIRCLIT BOARD
CELL WIRING HARNES
HIELL-VOLAGE CONNECTOR


JAC
EcoWaka
100% Electric

Business Model and Market Penetration

Ecowaka's pay-as-you-go financing model was at the heart of its original go-to-market strategy. This strategy, which is popular in developing nations with little access to consumer credit, enables users to utilize products without having to make significant upfront purchases. The decision to start with pay-as-you-go reflected both market realities and strategic objectives. Mr. Prince points out that expecting customers to purchase electric three-wheelers outright, especially for a new and unproven product, would have created a strong barrier to entry. Pay-as-you-go financing removes this barrier and allows customers to experience the product's benefits directly.

Beyond market access, the pay-as-you-go model fulfilled a second crucial function. In the early stages of the company's development, it allowed Ecowaka to collect extensive user feedback while customers used the products under real-world operating circumstances. This input confirmed presumptions on charging patterns and range requirements, helped identify areas for improvement and maintenance needs, and guided adaptive changes in engineering design. Building credibility with possible funding partners and improving product specifications were made possible by the data gathered from these early deployments.

> *"Data informs everything—from design to pricing to customer communication. Every iteration begins from field data." — Prince Ojeabulu*

Instead of trying to establish direct-to-consumer channels from the ground up, the focus was to leverage already-existing transport networks. Similar to conventional commercial vehicle firms, Ecowaka makes direct contact with ride operators and transport associations. These groups maintain trusted relationships with riders and represent groups of potential clients.

At the moment, Ecowaka utilizes a small team of about twelve people to handle production, R&D, marketing, sales, communications, collaborations, and investment functions. The reality of early-stage businesses, where team members frequently take on multiple responsibilities and contribute to various functional areas, is reflected in this organizational structure. Frameworks created by the company are scalable as the business expands.

After-Sales Strategy: Leveraging Existing Ecosystems

Ecowaka's after-sales approach reflects a thorough understanding of market dynamics and business sustainability. The business has chosen to collaborate with current automotive service providers and train them to service electric three-wheelers rather than trying to create a completely new service network of technicians. The product's hardware components are deliberately designed, where possible, to align with parts already available in the Nigerian market. This requires careful engineering attention during the design phase, examining each component to identify whether equivalent parts exist locally and how to maximize parts commonality with established supply chains. For electrical components and systems, Ecowaka provides comprehensive warranties for a defined period. This warranty coverage removes risk from customers during the critical early ownership phase when reliability concerns are highest. For mechanical components that wear more quickly and require frequent service, customers rely on the trained local mechanics and already existing parts in the market.

When Ecowaka deploys vehicles in a new area, its deployment team initially provides direct support for a short period. During this time, the team identifies local mechanics who already serve the rider community and have established trust relationships. Ecowaka then approaches these mechanics with training and partnership opportunities. This decentralized model supports scalability and ensures operational efficiency and lays the groundwork for grassroots capacity building in the e-mobility ecosystem.

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Challenges: Financing, Infrastructure, and Market Development

1. Access to affordable financing remains the single greatest barrier to rapid EV adoption in Nigeria, according to Mr. Prince. Most riders who represent Ecowaka's target customer segment lack the capital to purchase vehicles up front. This necessitates financing partnerships, yet most financial institutions remain highly risk-averse regarding electric mobility. This dynamic mirrors Mr. Prince's earlier observations in the solar sector during his time at Rensource. Initially, no financial institutions wanted to finance solar because they perceived excessive risk; however, after several years of market development and demonstrated asset performance, investors and financial institutions started coming. This risk-aversion pattern is repeating itself in the EV sector, and Mr. Prince expects it will take time before financial institutions become comfortable offering EV financing.

   The implication is clear: early-stage EV companies must largely finance their own asset deployments or find patient capital willing to accept higher risk in exchange for early-mover positioning. This reality places significant capital requirements on companies and limits the pace of market expansion.

   The solution, in his view, is collaboration among EV companies to build the ecosystem collectively. By working together, early-stage companies can accelerate the de-risking process that will eventually attract mainstream financing.

2. Infrastructure challenges compound financing constraints. Access to adequate charging infrastructure represents one of the most significant operational barriers facing electric mobility adoption in Nigeria. While Ecowaka's large-battery vehicles minimize dependence on daytime charging, even overnight charging requires access to reliable electricity, which remains scarce and expensive in many Nigerian contexts. One of the solutions to this lies in collaboration among EV companies across the value chain, infrastructure providers, and mini-grid solar companies.

3. Beyond financing and infrastructure, another challenge is knowledge barriers. Electric mobility remains unfamiliar to most riders and passengers in Nigeria, creating natural apprehension about reliability, maintenance costs, and operational requirements. Customers want to know how long batteries will last, whether charging will be convenient, and what happens when vehicles need repairs. These questions are entirely reasonable and reflect customers' lived experience with Nigeria's infrastructural challenges.

However, Mr. Prince views these knowledge barriers as manageable through demonstration and education. The strongest evidence of shifting perception comes from existing EV customers and adopters of the technology. Riders who have operated electric three-wheelers consistently report that they cannot imagine returning to conventional ICE keke. The automatic transmission eliminates physical strain from clutch operation, reducing fatigue during long operating days. The lower operating costs improve profitability, and the reduced noise and smoother operation enhance the riding experience for both drivers and passengers. These tangible benefits foster strong product loyalty and word-of-mouth advocacy that gradually overcome knowledge barriers across the broader market.

Lessons and Reflections

Ecowaka's experience, though early in the company's lifecycle, already offers valuable insights for entrepreneurs, policymakers, and investors interested in Africa's electric mobility transition.

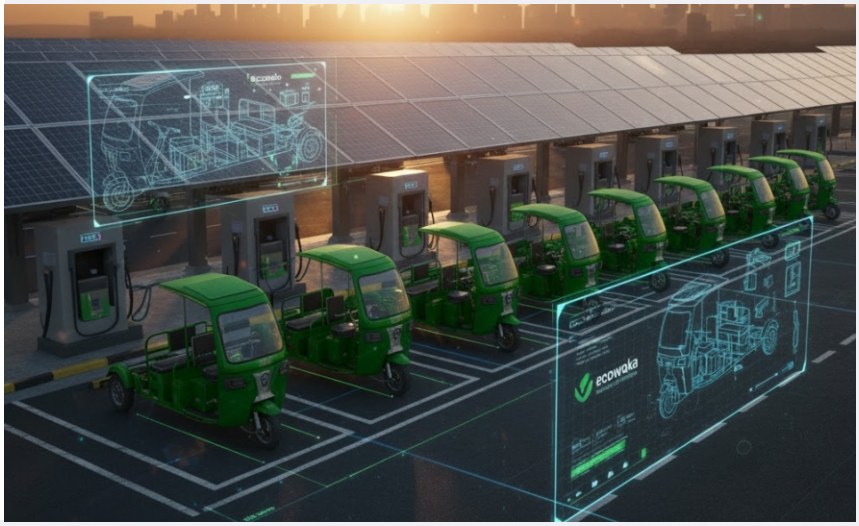
1. Local adaptation is non-negotiable for competitive success. Ecowaka's investment in designing electric tricycles specifically for Nigerian operating conditions reflects a core insight that importing solutions designed for other markets creates competitive vulnerability. Products must be engineered for local road conditions, power infrastructure constraints, customer preferences, and economic realities. This requires time, capital, and technical expertise, but it creates defensible differentiation that cannot be easily replicated by competitors who simply import and distribute.
2. Understanding customer economics is a key driver, as electric mobility's value proposition ultimately depends on delivering superior economics for users. Ecowaka's focus on both rider and passenger needs reflects recognition that adoption requires clear value for all stakeholders. Riders must improve their earnings while reducing costs and physical strain. Passengers must experience safe, comfortable, affordable transport.
3. Collaboration accelerates market development and helps manage capital constraints. No single company can build the ecosystem independently, nor should they try. A collaboration-oriented approach among EV companies, energy providers, and existing automotive service networks can accelerate ecosystem development. This collaborative approach also builds goodwill and mutual support among companies that might otherwise view themselves purely as competitors.
4. Patient capital and bootstrap funding remain essential in early markets where commercial financing is unavailable on reasonable terms. EV companies must rely on founder capital, angel investment, grants, and patient development finance to fund

early operations. This reality limits the pace of market development but also selects for committed entrepreneurs willing to invest their own resources in proving the business case. The companies that survive this early phase will have demonstrated both business viability and founder commitment, making them more attractive partners for later-stage capital.

5. Data-driven adaptation builds better products and accelerates product-market fit. Ecowaka's commitment to collecting operational data and feeding insights back into product development creates a learning loop that continuously improves offerings. This disciplined approach to learning reduces the risk of large-scale deployment of unproven designs and ensures that each product iteration incorporates real-world feedback from actual operating conditions.

Conclusion: Building Indigenous Capacity for Africa's Electric Future

Ecowaka's journey illustrates both the promise and the pragmatic challenges of building an indigenous electric vehicle company in Nigeria. The company has deployed approximately thirty electric tricycles (Keke) in its first year of operations, a modest scale that may seem small compared to Nigeria's vast transportation market. However, this early deployment phase serves critical functions beyond revenue generation. It validates product design, builds customer references, demonstrates economic viability to potential financing partners, and develops operational capabilities that will enable later scaling.



The broader question extends beyond Ecowaka's individual success. Will Nigeria develop a domestic electric mobility ecosystem that creates local jobs, builds technical capabilities, and positions Nigerian companies as regional leaders? Or will the market evolve primarily through importation and distribution, capturing less value and fewer development benefits domestically? The answer will depend partly on government policy, including incentive structures, import regulations, and infrastructure investment. But it will also depend on the execution capabilities of companies like Ecowaka that are investing their resources and reputation in building from the ground up in challenging market conditions.

As Nigeria strives toward its 2060 net-zero target, companies like Ecowaka will play a pivotal role in turning policy ambitions into tangible impact. The electric tricycle may appear modest, but it embodies the promise of cleaner cities, lower transport costs, and a new industrial narrative powered by local ingenuity.